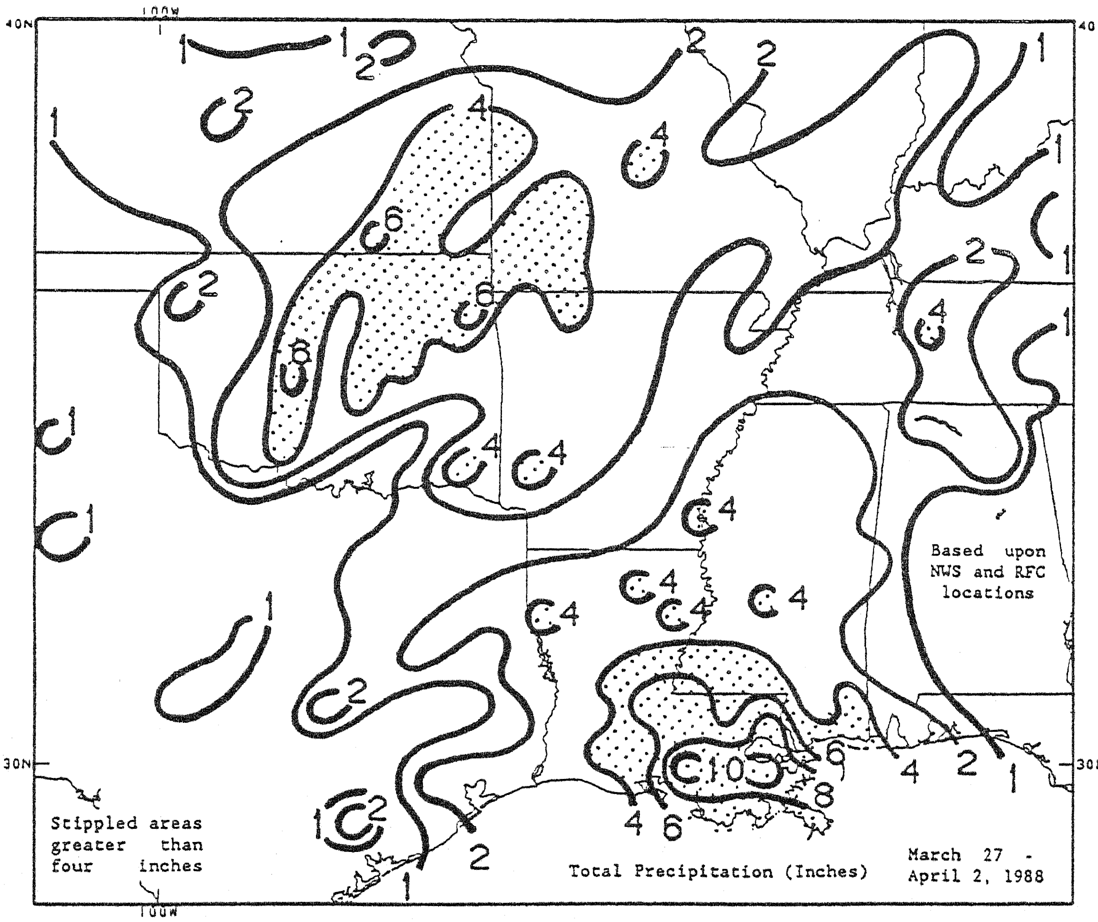
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

No. 88/14 Washington, DC April 2, 1988



PARTS OF THE CENTRAL GREAT PLAINS AND GULF COAST REGION WERE INUNDATED WITH TORRENTIAL THUNDERSTORMS LAST WEEK, WHILE FARTHER EAST, ABNORMALLY DRY CONDITIONS CONTINUED IN MUCH OF THE SOUTHEAST

NOAA - NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

WEEKLY CLIMATE BULLETIN

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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

Highlights of major global climatic events and anomalies.
U.S. climatic conditions for the previous week.
U.S. apparent temperatures (summer) or wind chill (winter).
Global two-week temperature anomalies.
Global four-week precipitation anomalies.
Global monthly temperature and precipitation anomalies.
Global three-month precipitation anomalies (once a month).
Global twelve-month precipitation anomalies (every 3 months).
Global temperature anomalies for winter and summer seasons.
Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF APRIL 2, 1988
(Approximate duration of anomalies is in brackets.)

1. Western United States:
UNUSUAL DRYNESS CONTINUES IN CALIFORNIA.
Little or no precipitation fell at most California stations where dryness remains [11 weeks].

2. Eastern United States:
DRYNESS PERSISTS.
Rainfall amounts were generally less than 10.7 mm (0.42 inch) throughout much of the eastern United States [9 weeks].

3. Louisiana:
HEAVY RAINS DELUGE AREA.
Heavy showers and thunderstorms dumped up to 281.9 mm (11.10 inches) of rain in parts of southern Louisiana (see U.S. Weekly Weather Highlights) [Episodal Event].

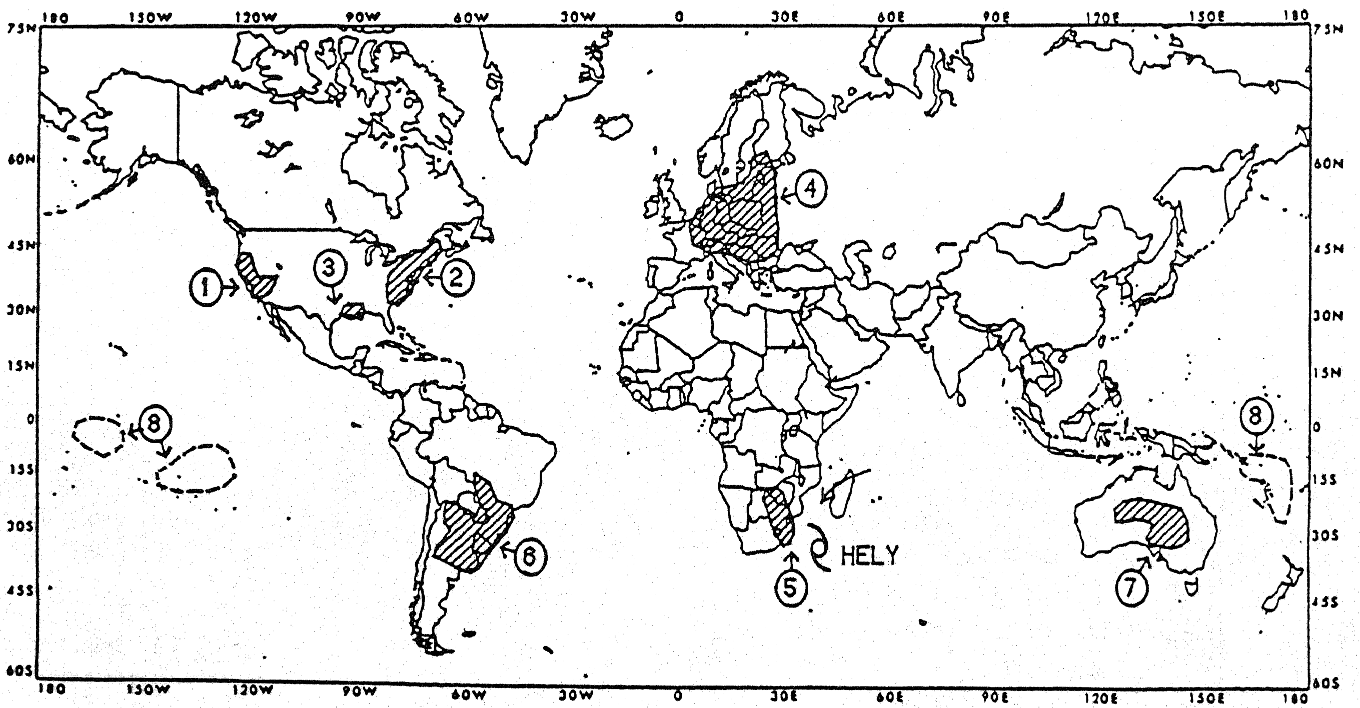
4. Europe:
UNUSUALLY WET CONDITIONS CONTINUE.
Moderate precipitation, as much as 107.6 mm (4.19 inches) in Switzerland, was measured across most of southern Scandinavia and central Europe [11 weeks].

5. Zimbabwe, Botswana, and Northern South Africa:
WETNESS DIMINISHES.
Light precipitation, generally less than 12.9 mm (0.51 inches), fell in the region as abnormally wet conditions eased. [7 weeks].

6. Brazil, Uruguay, and Argentina:
TEMPERATURES REMAIN ABOVE NORMAL.
Temperatures were up to $4.8^{\circ}C$ ($8.6^{\circ}F$) above normal across much of southern Brazil, Uruguay, and Argentina [4 weeks].

7. North Central Australia:
RAINS END DRYNESS.
Heavy precipitation, up to 251.0 mm (9.88 inches), ended the unusually dry conditions in the interior of north central Australia [Ended at 8 weeks].

8. Central and Eastern Tropical Pacific:
REFER TO FEBRUARY 1988 EL NINO/SOUTHERN OSCILLATION (ENSO) ADVISORY.
The areas of positive sea surface temperature anomalies above $1^{\circ}C$ ($1.8^{\circ}F$) have greatly diminished over the past few months. Regions above $1^{\circ}C$ ($1.8^{\circ}F$) during February 1988 are outlined. The March 1988 ENSO Summary will appear in the middle of April.



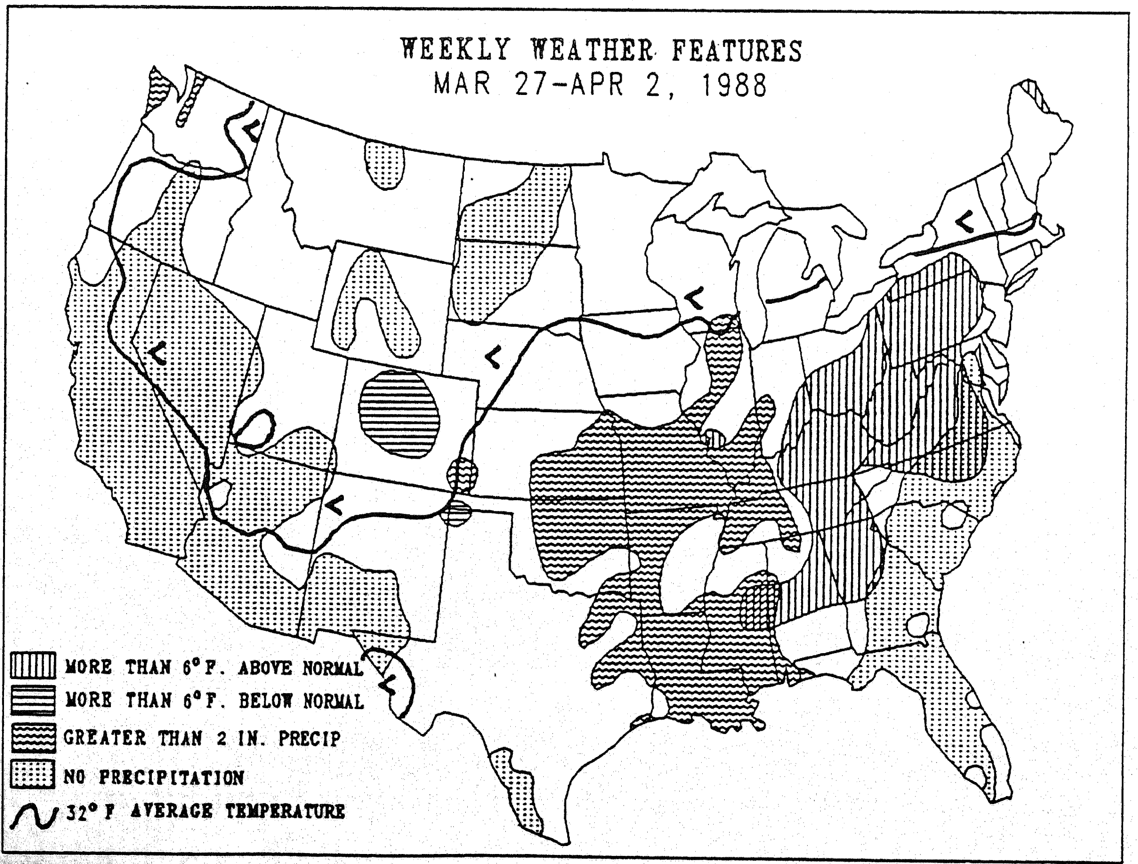
Approximate locations of the major anomalies and events described above are shown on this map. See the other world maps in this Bulletin for current two-week temperature anomalies, four-week precipitation anomalies, and (occasionally) longer-term anomalies.

U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK OF MARCH 27 THROUGH APRIL 2, 1988

Much of the central Great Plains, lower Midwest, and western third of the Southeast received heavy rainfall from strong, and sometimes violent, thunderstorms last week (see Table 1). According to the River Forecast Center, greatest amounts per state were 3.9 inches in southern Illinois, 4.2 inches in west-central Tennessee, 5.4 inches in southwestern Missouri, 5.7 inches in northwestern Arkansas, 6.0 inches in southeastern Kansas, 6.6 inches in northeastern Oklahoma, 7.1 inches in southwestern Mississippi, and 11.1 inches in south-central Louisiana (see front cover). The southeastern portion of Louisiana, where weekly totals ranged between six to ten inches, experienced some flooding as the majority of the rain fell on Friday and Saturday. Elsewhere, parts of the Pacific Northwest measured moderate to heavy precipitation for the second consecutive week. Over four inches of rain was recorded along the Washington coast, while stations in the Cascades observed up to 6.1 inches of precipitation. Light to moderate amounts were reported in the remainder of the Pacific Northwest, throughout the Rockies, in the southern Great Plains, upper Midwest, northern New England, and the central third of the Southeast. Little or no precipitation fell in the Southwest and Great Basin, the northern Great Plains, south-central Texas, and east of the Appalachians from New Jersey and eastern Pennsylvania southward through Florida.

Unusually warm conditions prevailed in the Southwest and along the West Coast, in the northern and central Great Plains, Midwest, and the eastern third of the nation (see Table 2). Largest departures above normal (+8 to +10°F) were located near the Appalachian Mountains, especially in Pennsylvania and West Virginia. Unseasonably cooler weather occurred from the northern Rockies southeastward into Texas and western Louisiana, and in northern Minnesota. Bitterly cold Arctic air gripped parts of northern and western Alaska as temperature departures were as great as 10°F below normal (see Table 3).



NOTICE: The weekly extreme minimum 32°F isotherm has been changed to the weekly average 32°F isotherm AND the area(s) of no precipitation (stippled pattern) have been included.

TABLE 1. Selected cities with more than three inches of precipitation for the week.

New Orleans NAS, LA (NBG)	10.39	Biloxi, MS	4.61
New Orleans, LA (MSY)	10.36	Hilo, HI	4.14
New Orleans, LA (NEW)	7.87	Quillayute, WA	4.08
Chanute, KS	6.02	Tulsa, OK	4.05
Harrison, AR	5.67	Fort Smith, AR	3.91
Alexandria, LA	5.27	Meridian NAS, MS (NMM)	3.91
Baton Rouge, LA	5.21	Shreveport, LA (BAD)	3.58
Oklahoma City, OK	5.08	Lafayette, LA	3.41
Jackson, MS	5.00	Yakutat, AK	3.34
Joplin, MO	4.88	Shreveport, LA (SHV)	3.34
Fayetteville, AR	4.77	Meridian, MS (MEI)	3.26
Springfield, MO	4.71	Rockford, IL	3.23
Annette Island, AK	4.69	Hopkinsville, KY	3.16
Monett, MO	4.67	Knob Noster, MO	3.05
McComb, MS	4.64		

TABLE 2. Selected cities with temperatures averaging greater than 6°F ABOVE normal for the week.

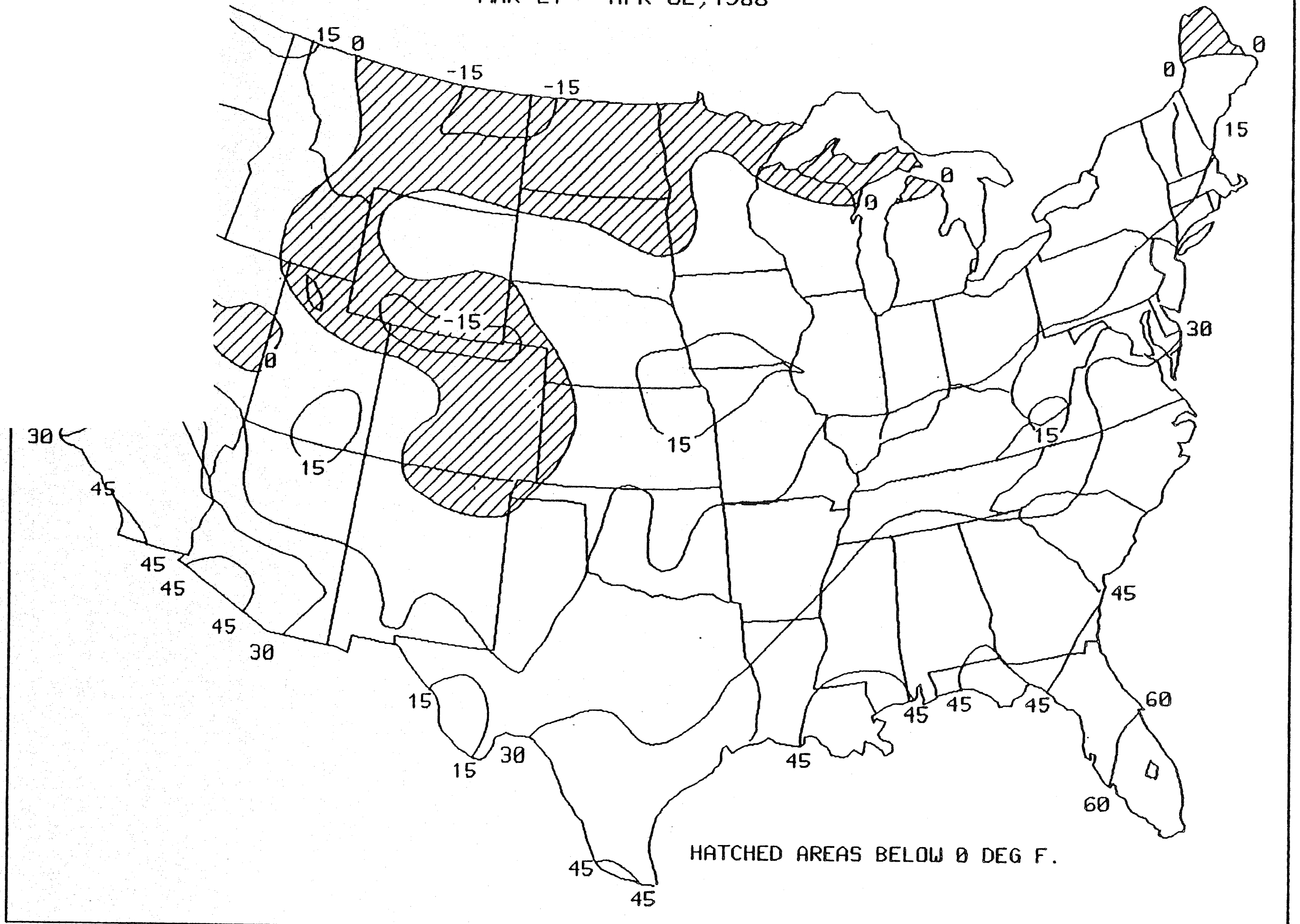
Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Mt. Washington, NH	+11	28	Rumford, ME	+ 7	41
Altoona, PA	+10	52	Worchester, MA	+ 7	45
Bradford, PA	+10	47	Vichy/Rolla, MO	+ 7	56
Beckley, WV	+ 9	55	Binghamton, NY	+ 7	44
Bluefield, WV	+ 9	57	Akron, OH	+ 7	49
San Bernardino, CA	+ 8	66	Cincinnati, OH	+ 7	55
Lexington, KY	+ 8	57	Dayton, OH	+ 7	52
Williamsport, PA	+ 8	51	Youngstown, OH	+ 7	49
Crossville, TN	+ 8	58	Zanesville, OH	+ 7	52
Charleston, WV	+ 8	58	Pittsburgh, PA	+ 7	52
Morgantown, WV	+ 8	55	Wilkes/Barre, PA	+ 7	49
Long Beach, CA	+ 7	66	Bristol, TN	+ 7	58
Oakland, CA	+ 7	62	Washington/Dulles, VA	+ 7	55
San Jose, CA	+ 7	62	Roanoke, VA	+ 7	58
Atlanta, GA	+ 7	64	Huntington, WV	+ 7	58
Belleville, IL	+ 7	55	Martinsburg, WV	+ 7	54
Bowling Green, KY	+ 7	58	Parkersburg, WV	+ 7	55
Louisville, KY	+ 7	58			

TABLE 3. Selected cities with temperatures averaging greater than 4°F BELOW normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Wainwright, AK	-10	-18	Unalakleet, AK	- 5	9
Barter Island, AK	- 9	-20	Pueblo, CO	- 5	41
Kotzebue, AK	- 9	- 4	Trinidad, CO	- 5	39
St. Paul Island, AK	- 9	16	Tucumcari, NM	- 5	48
Denver, CO	- 6	36	Amarillo, TX	- 5	46
Eagle, CO	- 6	31	Delta, UT	- 5	40
Bettles, AK	- 5	6	Elkhart, KS	- 5	44

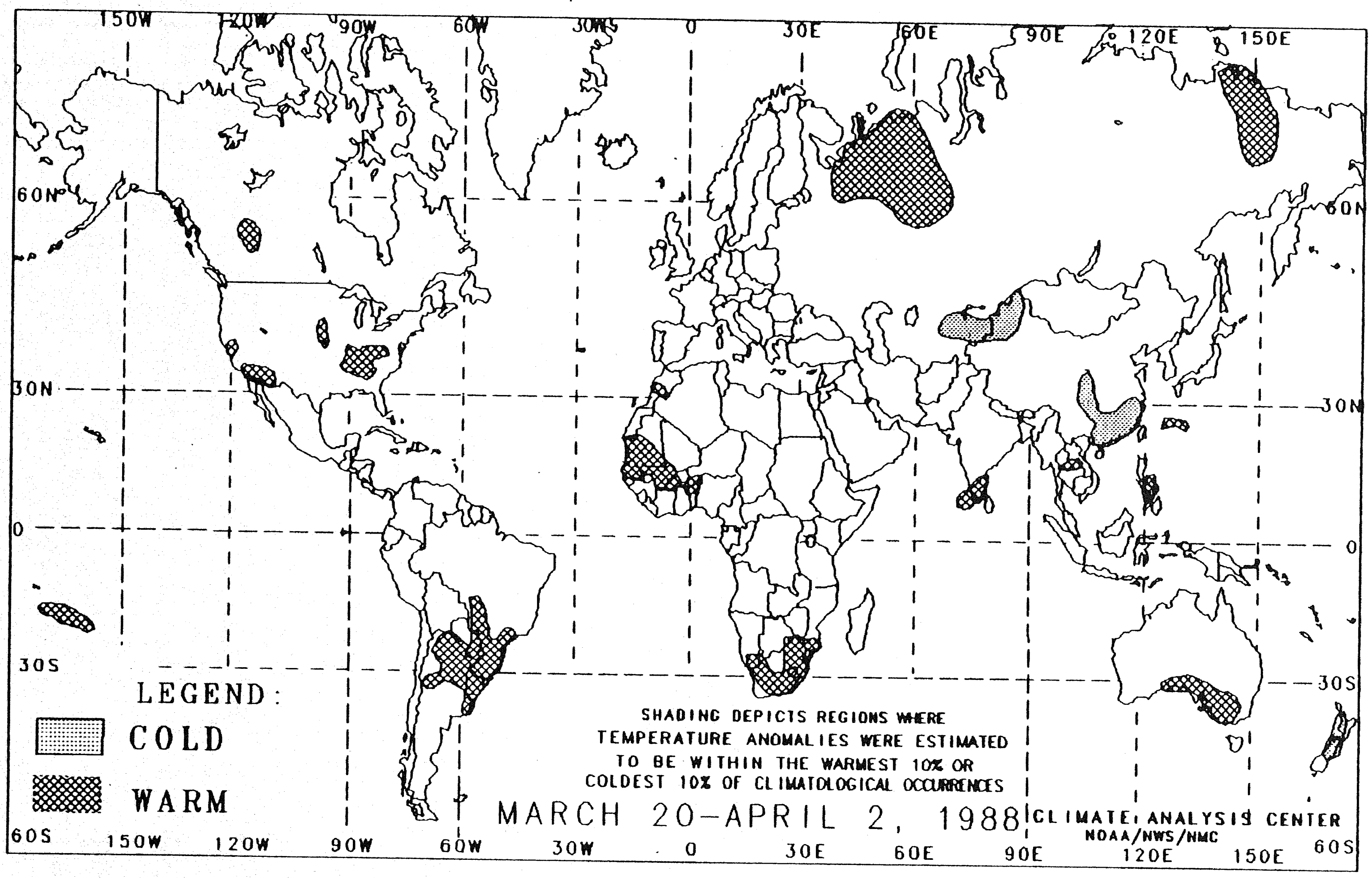
COLDEST WIND CHILL (°F)

MAR 27 - APR 02, 1988



Above normal temperatures dominated most of the United States last week. Early in the week, however, a strong storm system centered in the central Great Plains brought cold air and strong winds to the northern Great Plains and central Rockies as wind chill values in these areas dropped below -15°F.

GLOBAL TEMPERATURE ANOMALIES
2 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

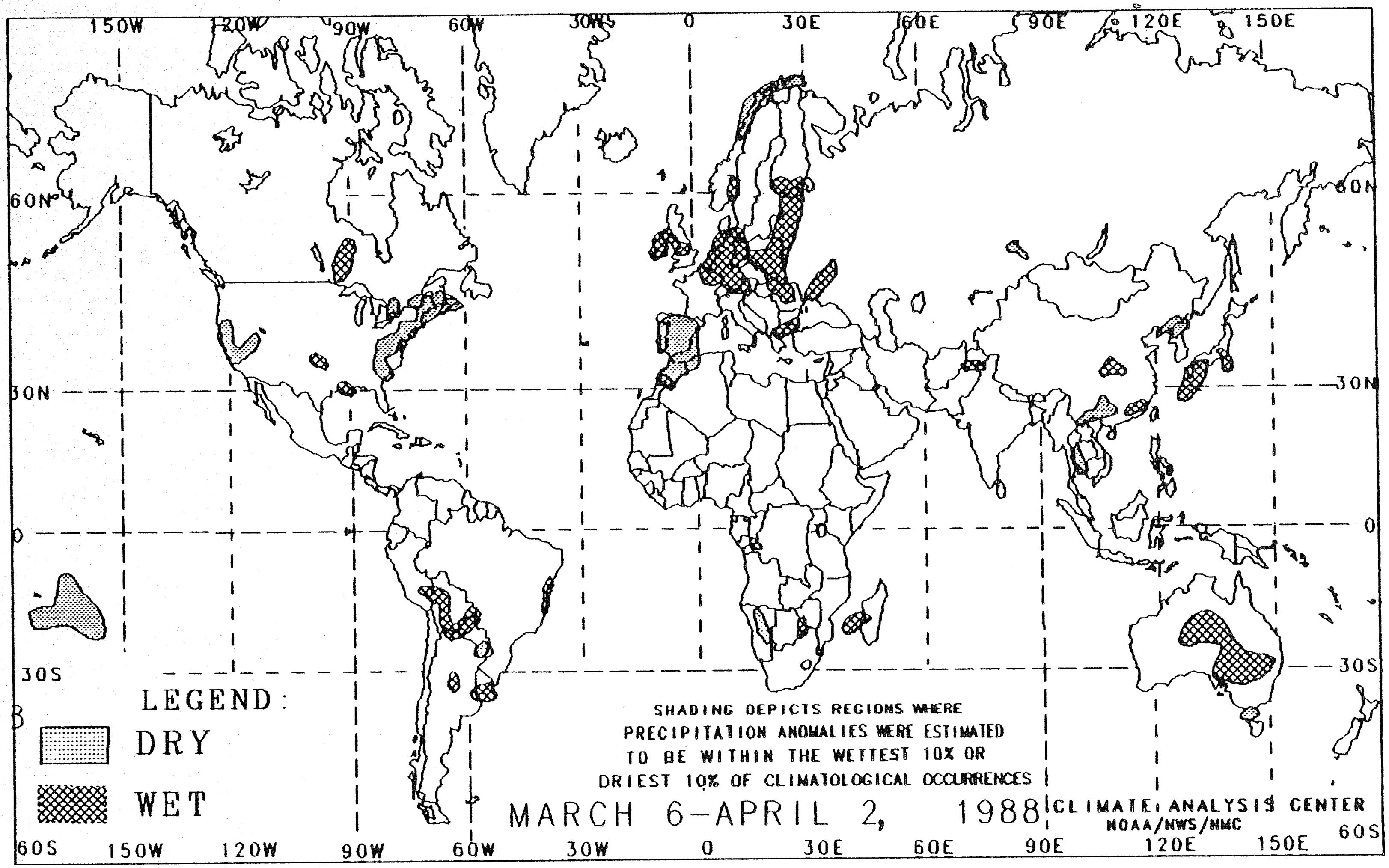
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining precentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

GLOBAL PRECIPITATION ANOMALIES

4 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

SPECIAL CLIMATE SUMMARY

Climate Analysis Center, NMC
National Weather Service, NOAA

REVIEW OF THE 1987-1988 AUSTRALIAN "RAINY" SEASON

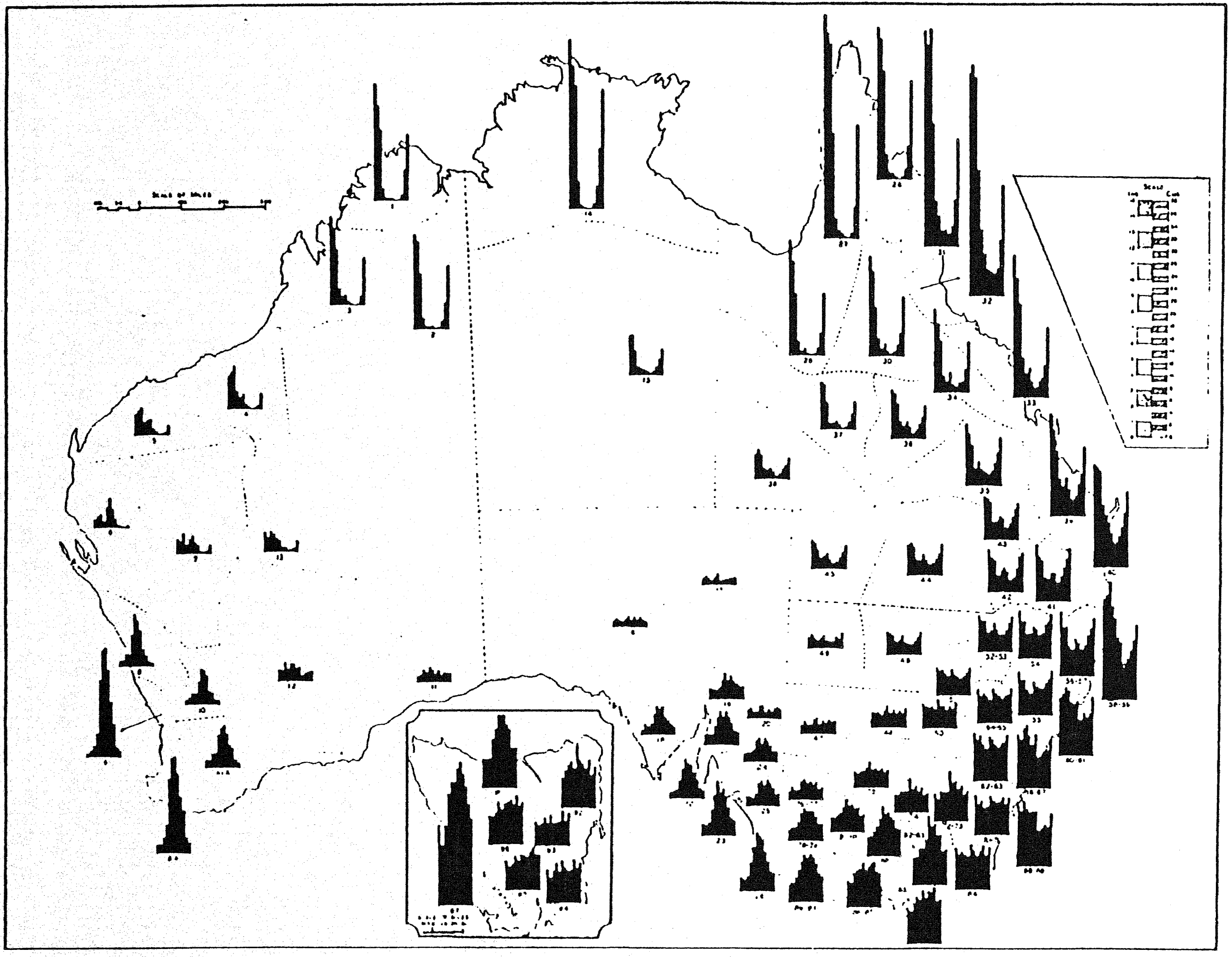


Figure 1. Monthly distribution of rainfall. The rainfall in each month of the year and for each district are shown by a black column; the months follow from left (January) to right (December) in each district diagram. The amount of rain for each month is shown by the height of the respective column, as from the scale on the right, in inches and cm. (from Bureau of Meteorology, 1982).

As depicted in Figure 1, most of the northwestern, northern, and northeastern sections of Australia normally receive the majority of their annual rainfall during the summer months (December-March). In some northern locations, the "transitional" months of October, November, and April also contribute to the yearly precipitation total. Farther south, especially in southern New South Wales and Victoria, the rainfall is more evenly distributed during the year. Only the southwestern and south-central coastal regions of Australia normally have a winter (June-September) rainfall maximum.

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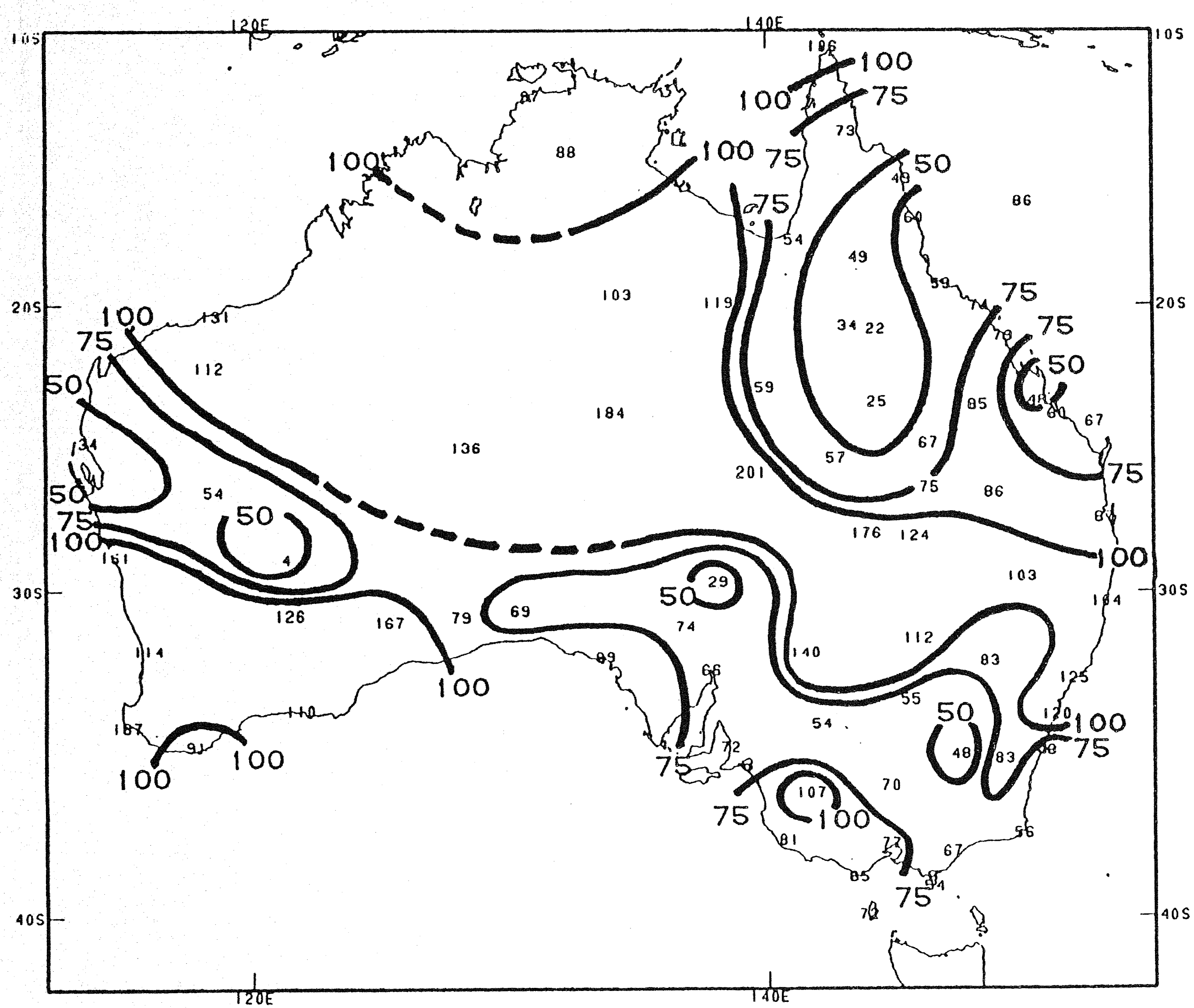

Figure 2. The percentage of normal precipitation from October 1, 1987 - April 2, 1988.

Since October 1, 1987, unusually dry conditions have existed in northeastern Australia where several locations measured less than half their normal precipitation (see Figure 2). In these areas, seasonal deficiencies have ranged between -100 to -400 mm in the northern interior and up to -779 mm along the northeastern coast (see Figure 3). The three wettest months of the year are normally January-March in northeastern Australia, but during this period, most of the area recorded less than a third of their usual rainfall. Much of this deficiency was due to an abnormally dry January, where many locations established monthly minimum precipitation records. An example of the 1987-1988 seasonal precipitation in northeastern Australia can be represented by Cooktown, Queensland in Figure 4.

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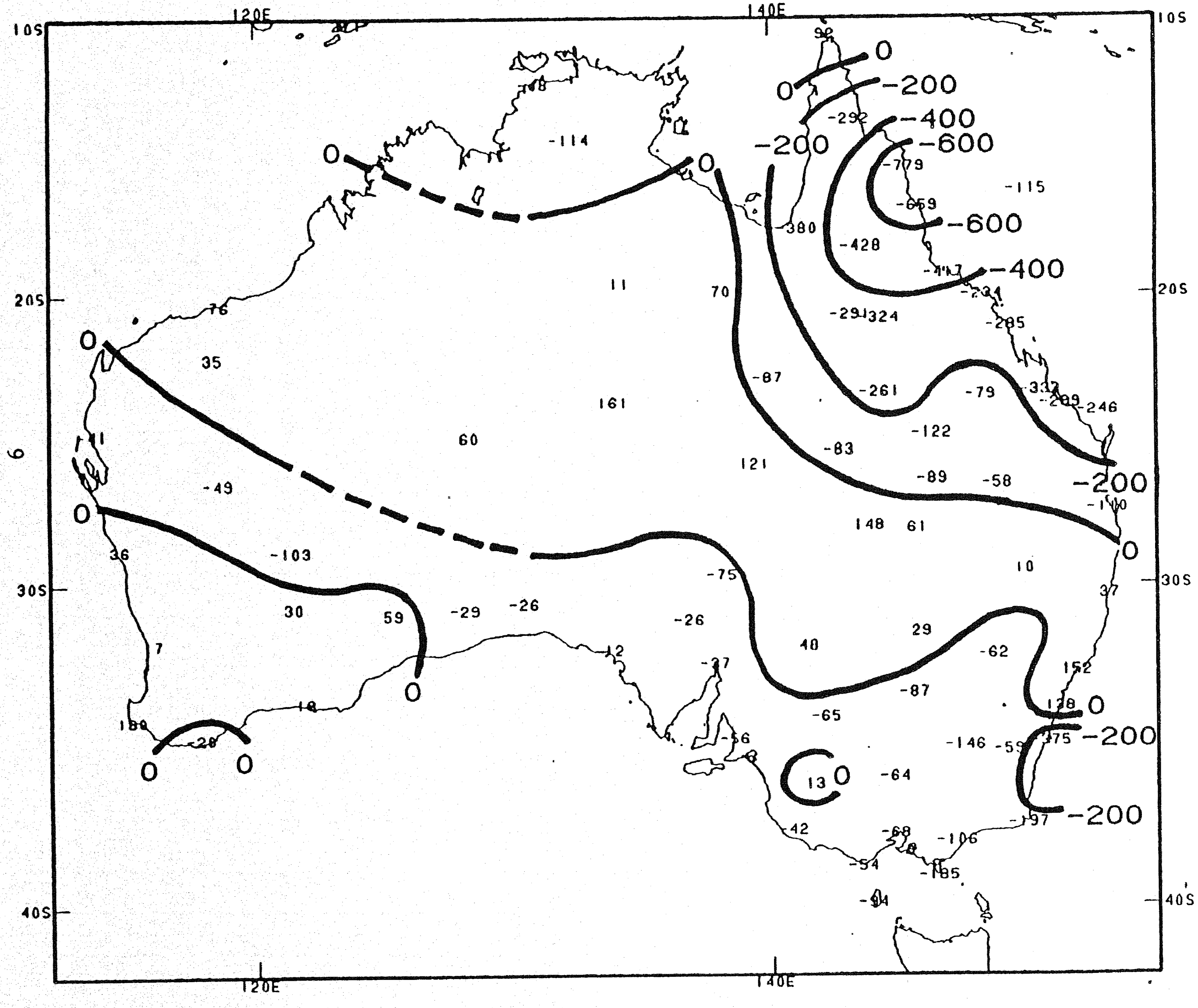

Figure 3. The departure from normal precipitation from October 1, 1987 - April 2, 1988 in whole mm.

Farther west, torrential rains last week deluged northwestern and central Australia as tropical moisture moved inland near the northwestern coast of Western Australia and moved rapidly southeastward, dropping up to 251 mm (86.2% of their ANNUAL total) on the normally dry town of Alice Springs (see Figure 5). This precipitation raised seasonal amounts well above normal throughout much of this region, which had previously been below normal.

As the rainy season normally diminishes in April, the prospects for significant rainfall to alleviate the huge precipitation deficiencies in northeastern Australia appears unfavorable. In New South Wales and Victoria, however, a more evenly distributed rainy season and the approach of the winter precipitation maximum are more auspicious for the reduction of the area's current rainfall deficits.

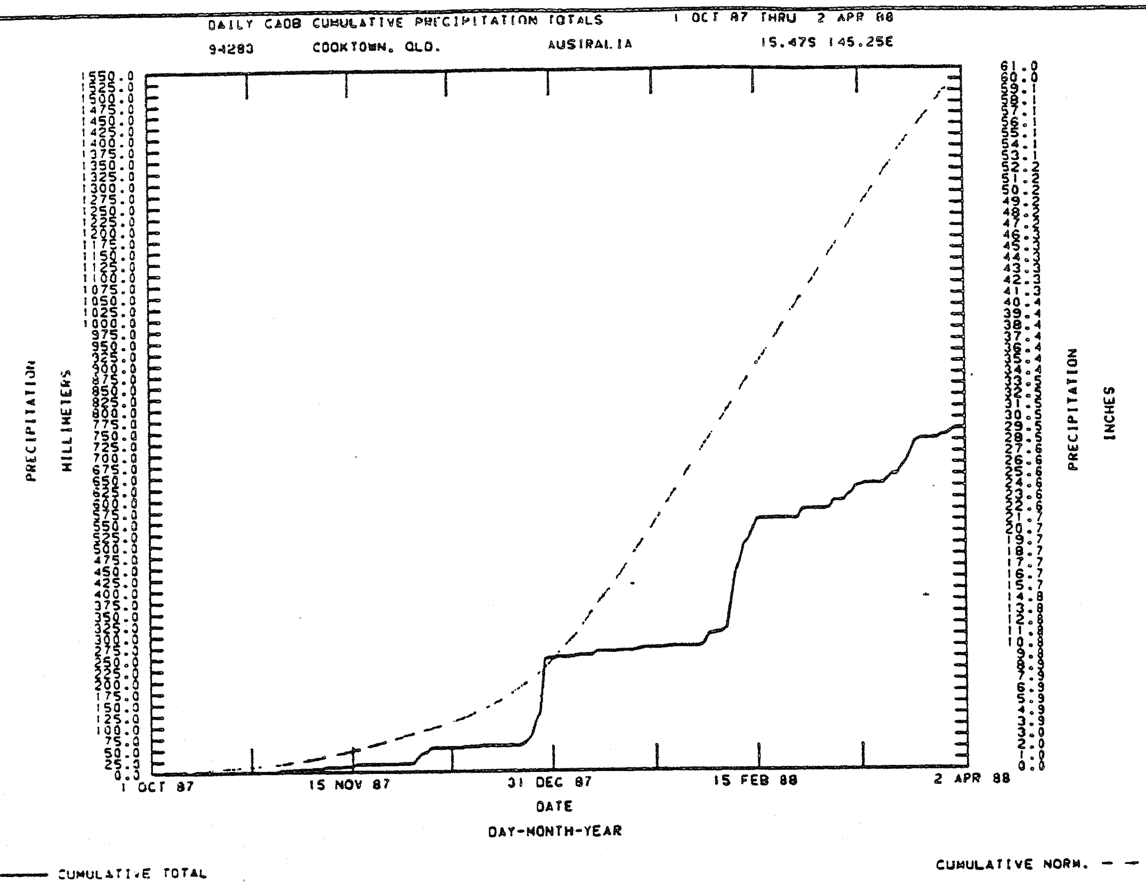

Figure 4. Time series plot of observed versus normal accumulated precipitation during 10/1/87-4/2/88 for Cooktown, Queensland, Australia. Note the lack of significant rainfall during January.

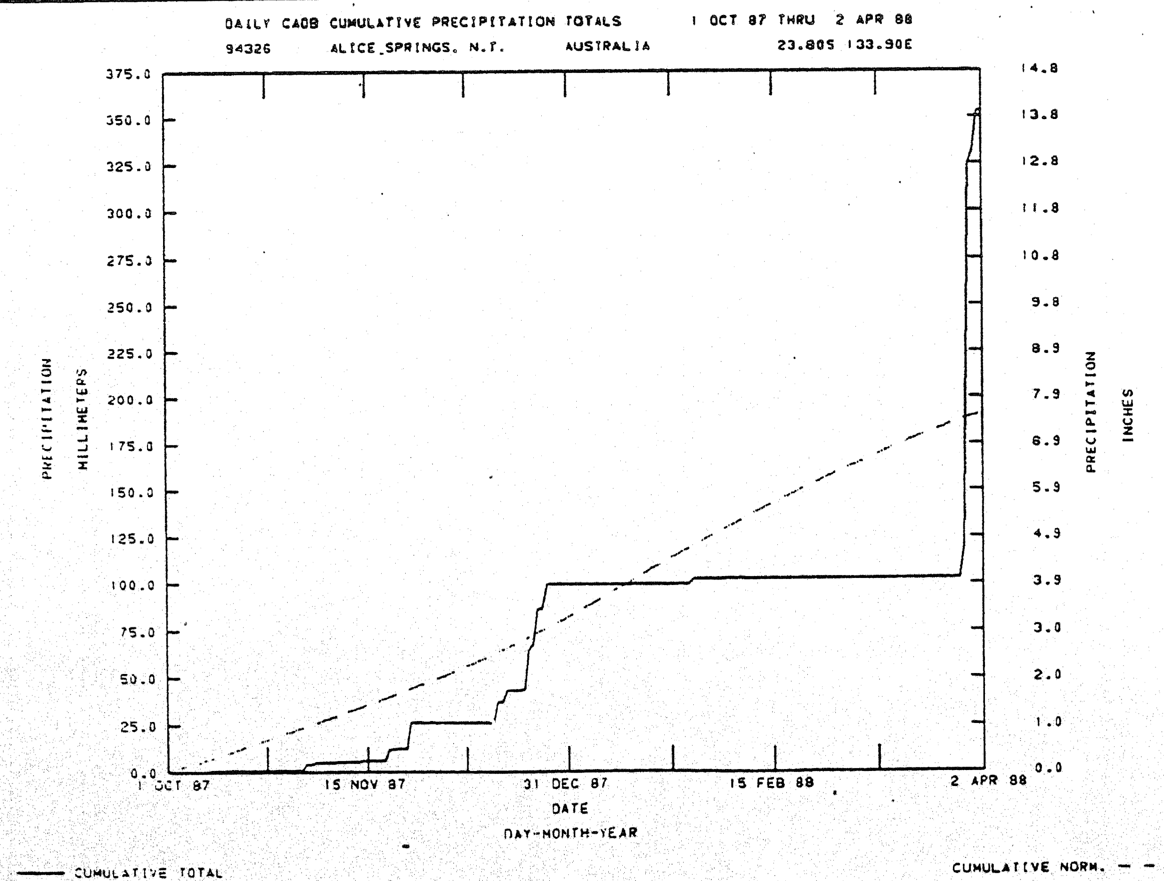

Figure 5. Time series plot of observed versus normal accumulated precipitation during 10/1/87-4/2/88 for Alice Springs, Northern Territories, Australia. Note the heavy rains on 3/30/88.